



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

3 Alicia



Travel-Spots Inventory Survey

Assignments of Employees
Localities of Field Work

Season of 1905

Botanic, Ethnographic and Hydrographic
Sections

1905-1906

1906-1907

1907-1908

1908-1909

The Branner Geological Library



LELAND STANFORD JUNIOR UNIVERSITY

United States Geological Survey

==

Assignments of Employees

and

Localities of Field Work

Season of 1905

Geologic, Topographic, and Hydrographic
Branches

June 1, 1905

GOVERNMENT PRINTING OFFICE

Washington
Government Printing Office

1905

517.3
U.S.A.

211387

VIAZEMI CHONINATE

C O N T E N T S .

	Page.
ASSIGNMENTS OF EMPLOYEES	5
Geologic branch	5
Division of geology and paleontology.....	5
Division of mining and mineral resources ..	18
Division of Alaskan mineral resources	21
Topographic branch	25
Hydrographic branch	39
LOCALITIES OF FIELD WORK, BY STATES	46
INDEX OF NAMES OF EMPLOYEES.....	71



ASSIGNMENTS OF EMPLOYEES, SEASON 1905.

GEOLOGIC BRANCH.

DIVISION OF GEOLOGY AND PALEONTOLOGY.

ABBE, CLEVELAND, Jr. Geologic Aid.

Will assist E. C. Eckel in an investigation of the iron ores, clays, and cement materials of the Appalachian Valley in Virginia and Alabama.

ALDEN, W. C. Assistant Geologist.

Will continue studies of the Pleistocene geology of quadrangles in southeastern Wisconsin for folio publication, under the supervision of T. C. Chamberlin.

ARNOLD, RALPH. Paleontologist.

Will assist W. H. Dall in investigation of the paleontology and stratigraphy of the Tertiary formations of the Pacific Coast.

ASHLEY, G. H. Geologist.

Under the supervision of M. R. Campbell and in co-operation with the State of Pennsylvania, will make detailed areal and economic surveys in the Pennsylvania bituminous coal field, also in the Kenova quadrangle, Ohio-Kentucky, for folio publication.

ATWOOD, W. W. Assistant Geologist.

Will assist R. D. Salisbury in glacial investigations in the Rocky Mountains.

Field Assignments.

BAIN, H. F. Geologist.

Will make a general investigation of the lead and zinc deposits of the United States, in cooperation with the division of mineral resources; and, assisted by E. F. Burchard and J. R. Bannister, will make an areal and economic survey of the Lancaster quadrangle, Wisconsin, for folio publication, and prepare a special report on the lead and zinc deposits.

BALL, S. H. Assistant Geologist.

Under supervision of J. E. Spurr, will make a geological reconnaissance of quadrangles in southern Nevada.

BANNISTER, J. R. Field Assistant.

Will assist E. F. Burchard in the survey of the Lancaster quadrangle, Wisconsin, under the supervision of H. F. Bain.

BASCOM, FLORENCE. Assistant Geologist.

Will continue studies of the crystalline rocks of southeastern Pennsylvania for the preparation of geologic folios of the Coatesville and Phoenixville quadrangles.

BASSLER, R. S. Field Assistant.

Will assist E. O. Ulrich in special investigations of Ordovician and Silurian formations of Pennsylvania, Maryland, and Virginia, with reference to iron ores and cement materials.

BASTIN, E. S. Geologic Aid.

Will assist George Otis Smith in a survey of the Rockland and Mount Desert quadrangles, Maine, for folio publication.

BAYLEY, W. S. Assistant Geologist.

Will continue areal, structural, and economic surveys of crystalline rocks in the Raritan, Morristown, and Easton quadrangles, New Jersey, for folio publication.

Division of Geology and Paleontology. 7

BOUTWELL, J. M. Assistant Geologist.

Will make a reconnaissance study of the economic geology of the Pearl, Hailey, Mackey, and Ketcham mining districts in southern Idaho.

BRANNER, J. C. Geologist.

Will continue the survey of quadrangles in the vicinity of Stanford University, California, for folio publication.

BROWN, C. W. Geologic Aid.

Will assist George Otis Smith in the areal and economic survey of the Rockland and Mount Desert quadrangles, Maine.

BURCHARD, E. F. Geologic Aid.

Will assist H. F. Bain in the areal and economic survey of the Lancaster quadrangle, Wisconsin, for folio publication. Will also assist G. W. Stose in the editing of geologic maps.

BUTTS, CHARLES. Assistant Geologist.

Will continue the survey of the areal and economic geology of the Birmingham district, Alabama, for folio publication, and the preparation of special reports on the coal and iron deposits, assisted by E. M. Dawson, jr.

CALKINS, F. C. Assistant Geologist.

Will make a geologic reconnaissance and mining investigation of the region north and east of the Coeur d'Alene mining district, Idaho, assisted by D. F. McDonald.

CAMPBELL, M. R. Geologist.

Will have supervision of the investigations of the fuel resources of the United States and of the areal and economic surveys of quadrangles in the central and northern Appalachian region. Assisted by A. G.

Field Assignments.

Leonard, he will make a reconnaissance investigation of the lignites of North Dakota and eastern Montana.

CHAMBERLIN, T. C. Geologist.

Will continue supervision of investigations of the glacial geology of the United States.

CLARK, W. B. Geologist.

Will continue investigations of the geology of the Atlantic Coastal Plain, in cooperation with the State Survey of Maryland, for folio publication.

COLLIER, A. J. Assistant Geologist.

Will make a survey of the areal and economic geology of the Carnegie quadrangle, Pennsylvania, in cooperation with the State, for folio publication.

CRIDER, A. F. Field Assistant.

Will assist E. C. Eckel in the study of the geology, underground waters, and mineral resources of the Mississippi embayment in Tennessee, Kentucky, and Arkansas.

CROSS, WHITMAN. Chief of Section.

Will continue supervision of the investigation of igneous rocks throughout the United States. Will also complete the geologic survey of the Lake City and Engineer Mountain quadrangles, Colorado, and make a reconnaissance of the San Cristobal quadrangle, Colorado, and of adjoining parts of Utah, Colorado, and New Mexico, assisted by Ernest Howe, W. H. Emmons, Albert Johannsen, L. H. Woolsey, and G. F. Kay.

DALE, T. N. Geologist.

Will continue surveys of crystalline rocks in western Massachusetts and Vermont, and will make a special investigation of the granite quarries of Maine, under the supervision of George Otis Smith.

Division of Geology and Paleontology. 9

DALL, W. H. Geologist and Paleontologist.

Will continue investigations of the paleontology and stratigraphy of the Tertiary formations of the Pacific Coast, assisted by Ralph Arnold.

DAWSON, E. M., Jr. Field Assistant.

Will assist Charles Butts in areal and economic surveys of the Birmingham district, Alabama.

DE WOLF, F. W. Geologic Aid.

Will make a survey of the areal and economic geology of the Johnstown quadrangle, Pennsylvania, with reference to the preparation of a geologic folio in cooperation with the State, under the supervision of Geo. H. Ashley.

DILLER, J. S. Geologist.

Will study the stratigraphy of portions of the Klamath Mountains, in northern California and southern Oregon.

ECKEL, E. C. Assistant Geologist.

With the assistance of Cleveland Abbe, jr., and R. S. Bassler, will make an investigation of the iron ores, clays, and cement materials of the Appalachian Valley in Virginia and Alabama; and, with the assistance of A. F. Crider, will continue the study of the geology, underground waters, and mineral resources of the Mississippi embayment in Tennessee, Kentucky, and Arkansas.

ELDRIDGE, G. H. Geologist.

Will complete his reports on the oil fields of California and the phosphate deposits of Florida.

EMERSON, B. K. Geologist.

Will complete the survey of the areal and structural geology of the Ware and Quinsigamond quadrangles, Massachusetts, for folio publication.

Field Assignments.

EMMONS, S. F. Chief of Section.

Will continue supervision of the investigations of the metalliferous ore deposits of the United States, and, with the assistance of J. D. Irving, will make a review of the economic geology of the Leadville district, Colorado.

EMMONS, W. H. Geologic Aid.

Will assist Whitman Cross in the areal and economic survey of the Lake City quadrangle, Colorado. In the latter part of the season will assist F. L. Ransome in the detailed survey of the Tombstone Special district, Arizona, and in a reconnaissance of the mining districts of Arizona.

FENNEMAN, N. M. Assistant Geologist.

Will be associated with H. S. Gale in a reconnaissance survey of the Yampa coal field in northwestern Colorado.

GALE, H. S. Geologic Aid.

Will be associated with N. M. Fenneman in a reconnaissance survey of the Yampa coal field in northwest-
ern Colorado.

GARREY, G. H. Geologic Aid.

Will assist J. E. Spurr in a detailed economic investigation of the Goldfield mining district, Nevada, and reconnaissance economic and geologic surveys of other districts in southern Nevada.

GILBERT, G. K. Chief of Section.

Will continue supervision of the section of physio-
graphic and glacial geology, and, in cooperation with
the division of hydrography, will make a study of hy-
draulic problems in California.

Division of Geology and Paleontology. 11

GIRTY, G. H.

Paleontologist.

Will continue the preparation of reports on material in hand, and make a detailed study of the stratigraphy and paleontology of the Carboniferous formations of southwestern Missouri, with special reference to the associated lead and zinc deposits.

GRATON, L. C.

Assistant Geologist.

Will assist W. Lindgren in a reconnaissance economic investigation of mining districts in New Mexico.

GRISWOLD, W. T.

Topographer.

Will complete the survey of the topography and of the areal and economic geology of the Sewickley quadrangle, Pennsylvania, for folio publication.

HAGUE, ARNOLD.

Geologist.

Will be engaged in the completion of the monograph on the Yellowstone National Park.

HAYES, C. W.

Geologist in Charge of Geology.

Will continue supervision of the field and office work of the division of geology and paleontology.

HEWITT, FOSTER.

Field Assistant.

Will assist J. E. Spurr in a detailed economic investigation of the Goldfield mining district, Nevada, and reconnaissance economic and geologic surveys of other districts in southern Nevada.

HOWE, ERNEST.

Assistant Geologist.

Will assist Whitman Cross in the preparation of reports of areas previously surveyed in Colorado.

IRVING, J. D.

Assistant Geologist.

Will assist S. F. Emmons in a review of the economic geology of the Leadville district, Colorado.

JOHANSEN, ALBERT. Geologic Aid.

Will assist Whitman Cross in a reconnaissance of the San Cristobal quadrangle, Colorado.

JOHNSON, W. D. Hydrographer.

Will investigate problems in glacial geology in the High Sierras, under the supervision of T. C. Chamberlin.

KAY, G. F. Field Assistant.

Will assist Whitman Cross in the areal and economic survey of the Lake City quadrangle, Colorado.

KEITH, ARTHUR. Geologist.

Will continue areal and economic surveys of quadrangles in North Carolina and Georgia, for folio publication, and, in cooperation with the State of North Carolina, will make an economic survey of Highland Forest, assisted by D. B. Sterrett.

KINDLE, E. M. Assistant Geologist.

Will continue studies of Devonian paleontology and stratigraphy, spending a part of the year in Alaska, in a study of stratigraphic problems.

KNOWLTON, F. H. Paleontologist.

Will be engaged in the completion of monographs on the flora of the Laramie and related formations and the flora of the Puget formation.

KOLBE, L. A. Field Assistant.

Will assist Laurence La Forge in areal surveys in northern Georgia.

LA FORGE, LAURENCE. Assistant Geologist.

Will continue surveys of the areal, structural, and economic geology of quadrangles in Georgia (Cartersville, Suwanee, Dahlonega, and Ellijay), for folio publication, assisted by D. B. Sterrett and L. A. Kolbe.

Division of Geology and Paleontology. 13

LEITH, C. K.

Assistant Geologist.

Will investigate the iron-ore deposits of Utah, under the supervision of C. R. Van Hise, and assist in some special investigations of iron-ore deposits of the Lake Superior region.

LEONARD, A. G.

Field Assistant.

Will assist M. R. Campbell in a reconnaissance investigation of the lignites of North Dakota and eastern Montana.

LEVERETT, FRANK.

Geologist.

Will assist T. C. Chamberlin in a study of the Pleistocene geology of the northern peninsula of Michigan.

LINDGREN, WALDEMAR.

Geologist.

Will make a reconnaissance economic investigation of mining districts in New Mexico, assisted by L. C. Graton; and, under the division of mining and mineral resources, will have charge of investigations relating to the production of gold and silver.

MCDONALD, D. F.

Field Assistant.

Will assist F. C. Calkins in a geologic reconnaissance of the region north and east of the Cœur d' Alene mining district, Idaho.

MUNN, M. J.

Assistant Topographer.

Under the supervision of W. T. Griswold, will complete the topographic and geologic survey of the Claysville quadrangle, Pennsylvania, for folio publication.

OSBORN, H. F.

Paleontologist.

Will be engaged in the completion of the monograph on the Sauropoda, assisted by W. K. Gregory, A. E. Anderson, and Rudolf Weber.

PALACHE, CHARLES. Assistant Geologist.

Will investigate the mineralogy of the Franklin Furnace district, New Jersey, associated with A. C. Spencer.

PHALEN, W. C. Geologic Aid.

Under the supervision of G. H. Ashley, will make an areal and economic survey of the Kenova quadrangle, Ohio-Kentucky, for folio publication.

PURDUE, A. H. Special Field Assistant.

Will make an areal and economic survey of the Eureka Springs quadrangle, Arkansas, for folio publication.

RANSOME, F. L. Geologist.

Will make a detailed survey of the Tombstone special district, Arizona, including an investigation of the Tombstone mining district, and a reconnaissance economic study of the mining districts of Arizona in general, assisted by W. H. Emmons.

RUSSELL, I. C. Geologist.

Will collaborate with Frank Leverett in a study of the Pleistocene geology of the northern peninsula of Michigan, under the supervision of T. C. Chamberlin.

SALISBURY, R. D. Geologist.

Will continue the study of glaciated areas in the Rocky Mountain region.

SCHRADER, F. C. Geologist.

Will make a reconnaissance investigation of the Gallup coal field, in northern New Mexico, assisted by M. K. Shaler, under the supervision of M. R. Campbell.

SCHULTZ, A. R. Field Assistant.

Will assist A. C. Veatch in a reconnaissance investigation of oil and coal fields of southwestern Wyoming.

Division of Geology and Paleontology. 15

SEAMAN, A. E. Field Assistant.

Will assist C. R. Van Hise in special investigations of iron-ore deposits in the Lake Superior region.

SHALER, M. K. Field Assistant.

Will assist F. C. Schrader in a reconnaissance of the Gallup coal field in northern New Mexico.

SMITH, C. N. Field Assistant.

Will assist J. A. Taff in areal and economic surveys in Indian Territory.

SMITH, G. O. Geologist.

Will continue supervision of investigations of the geology of the crystalline rocks of New England and the northern Appalachians. In cooperation with the State of Maine, and assisted by E. S. Bastin and C. W. Brown, will make a survey of the Rockland and Mount Desert quadrangles, for folio publication.

SMITH, W. N. Field Assistant.

Will assist C. R. Van Hise in special investigations of iron-ore deposits of the Lake Superior region.

SPENCER, A. C. Geologist.

Will complete the areal and economic survey of the Franklin Furnace quadrangle, New Jersey, for the purpose of preparing a geologic folio and a special report on the iron and zinc deposits of the area.

SPURR, J. E. Geologist.

Will make a detailed economic investigation of the Goldfield mining district, Nevada, and reconnaissance economic and geologic surveys of other districts in southern Nevada, assisted by Geo. H. Garrey and Foster Hewitt.

Field Assignments.

STANTON, T. W.

Chief of Section.

Will have supervision of stratigraphic and paleontologic investigations in various parts of the United States.

STERRETT, D. B.

Field Assistant.

Will assist Arthur Keith in the economic survey of the Highland Forest, North Carolina, and Laurence La Forge in geologic surveys in Georgia.

STOKE, G. W.

Geologist.

Will continue to have supervision of the editing of geologic maps, in which he will be assisted by E. F. Burchard. A portion of the season will be spent in the field, in areal and economic surveys, for folio publication, of quadrangles in West Virginia, Maryland, and Pennsylvania.

TAFF, J. A.

Geologist.

Will make a survey of the areal and economic geology of the Nowata quadrangle, Indian Territory, for folio publication, and the preparation of a special report on the oil fields, assisted by Carl N. Smith.

TAYLOR, F. B.

Special Field Assistant.

Will continue investigations of glacio-lacustrine phenomena in areas adjacent to Lakes Huron, Michigan, and Superior, and of the glacial geology of the Housatonic and Litchfield quadrangles, Massachusetts and Connecticut, under the supervision of T. C. Chamberlin.

ULRICH, E. O.

Geologist.

Will make investigations of the stratigraphy and paleontology of Ordovician and Silurian formations in Pennsylvania, Maryland, and Virginia, with special reference to iron ores and cement materials, and in the Upper Mississippi Valley and the Ozark region, with

Division of Geology and Paleontology. 17

special reference to lead and zinc deposits, assisted by R. S. Bassler.

VAN HISE, C. R.

Chief of Section.

Will continue supervision of investigations of pre-Cambrian and metamorphic rocks, and, assisted by C. K. Leith, A. E. Seaman, and W. N. Smith, will continue the study of the iron-ore deposits of Utah and the Lake Superior region.

VAUGHAN, T. W.

Geologist.

Will be engaged in the completion of monograph on later Tertiary corals and in investigations of the paleontology and stratigraphy of the Mississippi embayment in Tennessee, Kentucky, and Arkansas, in connection with studies which are being made of the geology and underground waters of that region.

VEATCH, A. C.

Assistant Geologist.

Will make a reconnaissance investigation of oil and coal fields in southwestern Wyoming, assisted by A. R. Schultz.

WALCOTT, C. D.

Director.

Will continue the preparation of a monograph on Cambrian brachiopods and will study the stratigraphy and paleontology of western Montana and western Utah, assisted by F. B. Weeks and E. Wood.

WEED, W. H.

Geologist.

Will complete the preparation of reports on the geology of the Butte mining district, the copper deposits of eastern United States, and the hot spring phenomena of the Yellowstone National Park.

WEEKS, F. B.

Librarian.

Will assist C. D. Walcott in stratigraphic studies in western Utah.

WHITE, DAVID. Geologist.

Will continue the study of the Pottsville floras, and, in connection with the survey of the Kenova quadrangle, Ohio-Kentucky, will make an investigation of the paleobotany and stratigraphy of the area.

WILLIAMS, H. S. Geologist and Paleontologist.

Will continue investigations of Devonian stratigraphy and paleontology in New York, Pennsylvania, and Maine.

WILLIS, BAILEY. Chief of Section.

Will continue the preparation of a geologic map of the United States and supervision of work in areal geology.

WOOD, ELVIRA. Geologic Aid.

Will assist C. D. Walcott in paleontologic investigations.

WOOLSEY, L. H. Assistant Geologist.

Will assist Whitman Cross in the areal and economic survey of the Lake City quadrangle, Colorado.

**DIVISION OF MINING AND MINERAL
RESOURCES.**

BIRKINBINE, JOHN. Special Agent.

In charge of the collection of the statistics of iron ore and manganese.

CLARK, W. B. Geologist.

In charge of the collection of the statistics of minerals in the State of Maryland, in cooperation with the Maryland Geological Survey.

DAY, D. T. Geologist in Charge of Division.

In charge of the preparation of the report on the mineral resources of the United States; will be engaged

Division of Mining and Mineral Resources. 19

on a special investigation of the black sand resources of the United States, with a concentrating plant at the Lewis and Clark Centennial Exposition, Portland, Oreg.

HEIKES, V. C. Field Assistant.

In charge of the collection of the statistics of minerals in Arizona, Idaho, and Utah, with special reference to the production of precious metals.

HOLMES, J. A. Fuel Expert.

In charge of the fuel-testing plant of the Geological Survey at St. Louis, Mo.

HOVEY, E. O. Field Assistant.

In charge of the collection of the statistics of antimony, arsenic, asphaltum and bituminous rock, bismuth, phosphate rock, rutile, and salt.

JONES, F. A. Field Assistant.

In charge of the collection of the statistics of minerals in New Mexico, with special reference to the production of precious metals.

KIRCHHOFF, CHARLES. Special Agent.

In charge of the collection of the statistics of copper.

KUNZ, G. F. Special Agent.

In charge of the collection of the statistics of precious stones.

LINDGREN, WALDEMAR. Geologist.

In charge of investigations relating to the production of gold and silver in the United States.

MERRILL, F. J. H. Field Assistant.

In charge of the collection of the statistics of bromine.

MIDDLETON, JEFFERSON. Statistician.

In charge of the collection of the statistics of the clay-working industries and greensand marl.

OLIPHANT, F. H. Field Assistant.

In charge of the collection of the statistics of natural gas and petroleum.

PARKER, E. W. Statistician.

In charge of the collection of the statistics of coal, coke and gas, tar and ammonia, in the United States. Also engaged in the work of testing coal at the fuel-testing plant of the Geological Survey at St. Louis, Mo.

PORTER, E. P. Field Assistant.

In charge of the collection of the statistics of minerals in Montana and South Dakota, with special reference to gold and silver.

PRATT, J. H. Field Assistant.

In charge of the collection of the statistics of abrasive materials, asbestos, barytes, chromite or chromic iron ore, fluorspar, cryolite, graphite, lithium, mica, mineral paints, monazite, nickel, cobalt, strontium ores, sulphur, pyrite, talc, soapstone, tungsten, molybdenum, uranium, vanadium, and zircon.

RIES, HEINRICH. Special Agent.

In charge of the collection of the statistics of flint and feldspar.

RULEY, W. W. Field Assistant.

In charge of the collection of the statistics of anthracite coal.

SWANK, J. M. Special Agent.

In charge of the collection of the statistics of iron and steel.

WARD, W. S. Field Assistant.

In charge of the collection of the statistics of minerals in Colorado, with special reference to gold and silver.

Division of Alaskan Mineral Resources. 21

WINCHELL, A. N. Field Assistant.

In charge of the collection of the statistics of minerals in Montana, with special reference to gold and silver.

YALE, C. G. Special Agent.

In charge of the collection of the statistics of minerals in California, Oregon, and Washington, with special reference to precious metals. He will also prepare reports on borax and magnesite.

DIVISION OF ALASKAN MINERAL RESOURCES.

BROOKS, A. H. Geologist in Charge of Division.

Will continue supervision of geologic and topographic work in Alaska. Will spend June and July in the Controller Bay region and in southeastern Alaska, and later in the year will go to Nome. Address, Washington, D. C.

BUTLER, B. S. Geologic Field Assistant.

Will assist R. S. Tarr in a geologic reconnaissance survey of Yakutat Bay.

CORSE, W. B. Topographic Field Assistant.

Will assist T. G. Gerdine in a topographic survey in the Solomon River region, Seward Peninsula.

GERDINE, T. G. Topographer.

Will make a topographic survey of an area of about 500 square miles in the Solomon River region, Seward Peninsula, on a scale of 1 : 45,000.

GRANT, U. S. Geologist.

Will make a geologic reconnaissance and an investigation of the mineral resources of the Prince William Sound region.

Field Assignments.

HAMILTON, E. G. Assistant Topographer.

Will make topographic surveys, under direction of G. C. Martin, of the Controller Bay coal and oil fields, on a scale of 1:45,000.

HESS, F. L. Geologic Aid.

Will assist F. H. Moffit in mapping the geology and studying the mineral resources of the Nome and Grand Central districts, Seward Peninsula, in reconnoitering adjacent areas, and will revisit the York tin-bearing region.

HILL, W. R. Topographic Field Assistant.

Will assist E. G. Hamilton in making topographic surveys of the coal and oil fields of the Controller Bay region, under G. C. Martin.

KINDLE, E. M. Assistant Geologist.

Will carry on stratigraphic and paleontologic investigations in southeastern Alaska, in cooperation with F. E. Wright.

KNOPF, ADOLPH. Geologic Field Assistant.

Will assist L. M. Prindle in continuing the geologic reconnaissance of the Yukon-Tanana region.

MADDREN, A. G. Geologic Field Assistant.

Will assist G. C. Martin in making a geologic survey of the coal and oil fields of the Controller Bay region.

MARTIN, G. C. Assistant Geologist.

Has charge of a party which will make geologic and topographic surveys in the Controller Bay region and a geologic reconnaissance of the Matanuska coal field.

MARTIN, LAWRENCE. Geologic Assistant.

Will assist R. S. Tarr in a geologic reconnaissance survey of Yakutat Bay.

Division of Alaskan Mineral Resources. 23

MOFFIT, F. H. Assistant Geologist.

Will map the geology and study the mineral resources of the Nome and Grand Central districts, and reconnoiter adjacent areas.

OLIVER, R. B. Assistant Topographer.

Will assist D. C. Witherspoon in topographic surveys in the Yukon-Tanana region.

PAIGE, SIDNEY. Geologic Aid.

Will assist U. S. Grant in a geologic reconnaissance and an investigation of the mineral resources of the Prince William Sound region, and G. C. Martin in geologic work in the Controller Bay region. Will also visit Kodiak Island, Herendeen Bay, and other points in southwestern Alaska, making economic and stratigraphic studies.

PRINDLE, L. M. Assistant Geologist.

Will continue the geologic reconnaissance and investigation of the mineral resources of the Yukon-Tanana region.

STONE, R. W. Assistant Geologist.

Will accompany D. C. Witherspoon and make a general geologic reconnaissance of the Yukon-Tanana region west of the Fairbanks and Circle City trail.

TARR, R. S. Special Assistant.

Will make a geologic reconnaissance of the region tributary to Yakutat and Disenchantment bays.

WITHERSPOON, D. C. Topographer.

Will continue the topographic reconnaissance mapping of the region included between Yukon Flats and Tanana River, and the towns of Circle and Chena, on a scale of 1:250,000.

Field Assignments.

WRIGHT, C. W.

Geologic Aid.

Will assist Fred E. Wright in making geologic reconnaissance surveys and investigations of ore deposits in the Wrangell and Ketchikan districts of southeastern Alaska. Will also make a supplementary study of the ore deposits of Berners Bay.

WRIGHT, F. E.

Assistant Geologist.

Will make geologic reconnaissance surveys and investigations of ore deposits in Wrangell and Ketchikan districts of southeastern Alaska.

YODER, B. A.

Topographic Field Assistant.

Will do level and traverse work, under T. G. Gerdine, in the Solomon River region, Seward Peninsula.

TOPOGRAPHIC BRANCH.

ANDERSON, C. G. Topographic Aid.

Assisting H. Munroe in topographic work in the Forsythe quadrangle, Missouri.

BAGLEY, J. W. Topographic Aid.

Assisting Oscar Jones in topographic work in the Talbotton quadrangle, Georgia.

BALDWIN, H. L., Jr. Topographer.

Will have charge of topographic parties mapping the Philipsburg quadrangle, Montana, and extending triangulation over the same area and also over the Moccasin Mountains, Montana.

BANNON, T. M. Topographer.

Has charge of parties engaged in topographic work in the Younts Peak quadrangle, Wyoming, and in extending triangulation over the southern part of the Yellowstone Forest Reserve. During the winter will have charge of parties at work near Florence, Arizona.

BARNARD, E. C. Topographer.

Is representative of United States Geological Survey on International Boundary Commission to locate and mark the line between the United States and Canada west of the summit of the Rocky Mountains; also has supervisory charge of the topographic work of the Geological Survey in Washington.

BASSETT, C. C. Topographer.

Has charge of party engaged in topographic work in the Winfield, Cooperstown, and Delhi quadrangles, New York.

BEAMAN, W. M. Topographer.

Has charge of party engaged in topographic work in the Relay, Laurel, and Rockville quadrangles, Maryland.

BIRDSEYE, C. H. Topographic Aid.

Has charge of party doing topographic work in Sacramento Valley, California.

BLACKBURN, J. E. Field Assistant.

Has charge of party engaged in topographic work at Philipsburg, Montana..

BLAIR, H. B. Topographer.

Has supervisory charge of topographic work in Tennessee, Alabama, Mississippi, and Louisiana, and immediate charge of a party engaged in work in the Birmingham and Bessemer quadrangles, Alabama.

BRIGHT, M. S. Levelman.

Has charge of precise level party working between Albuquerque and Silver City, New Mexico.

BROWN, W. N. Topographer.

Has charge of party engaged in topographic work in the Yorktown quadrangle, Virginia; Dahlonega Special district, Georgia, and Cartersville quadrangle, Georgia.

BURKLAND, A. O. Topographic Aid.

Engaged on topographic mapping in the Wilkesville quadrangle, Ohio.

CHAPMAN, PEARSON. Assistant Topographer.

Has charge of party engaged in topographic work in vicinity of Bellingham, Washington.

CHAPMAN, R. H. Topographer.

Has charge of parties making detailed and reconnaissance maps about Goldfield, Nevada.

CLARK, E. B. Topographer.

Has charge of party engaged in topographic work in the Suplee quadrangle, Pennsylvania.

CLARKSON, C. D. S. Topographic Aid.

Assisting H. B. Blair in topographic work in the Birmingham and Bessemer quadrangles, Alabama.

COE, ROBERT. Assistant Topographer.

Has charge of party engaged in topographic work in the Gatesville, Smithfield, Winton, and Clinton quadrangles, North Carolina.

COOKE, C. E. Topographer.

Has supervisory charge of parties engaged in topographic work in Illinois, Indiana, and Kentucky, and immediate charge of party engaged in mapping the Louisville, Georgetown, and Morganfield quadrangles Kentucky.

COWGILL, RALPH. Field Assistant.

Will have charge of party engaged in mapping the Cataldo quadrangle, Idaho.

CUMMIN, R. D. Topographer.

Has supervisory charge of parties engaged in topographic work in Pennsylvania, and immediate charge of a party engaged in topographic work in the New Cumberland quadrangle.

DAINGERFIELD, J. S. B. Topographic Aid.

Assisting C. E. Cooke on topographic work in the Louisville, Georgetown, and Morganfield quadrangles, Kentucky.

DAVIS, E. P. Field Assistant.

In charge of topographic party working in Sacramento Valley, California.

DAVIS, G. R. Assistant T

In charge of party working in the Mono quadrangle, California.

DOUGLAS, E. M.

Has charge of western division of topographic map, Washington, D. C.

DUKE, BASIL.

Has charge of party engaged in topographic mapping of the Bismarck quadrangle, North Dakota.

DUNNINGTON, A. F.

Has supervisory charge of and will inspect forest reserve boundaries, and will carry out supervision over Priest River Forest Reserve, Idaho.

EAKIN, J. R.

Assistant T

Has charge of party engaged in topographic mapping of the Ripley, Ravenswood, and Bidwell quadrangles, West Virginia-Ohio.

ELLIS, J. R.

Assistant T

Has charge of party extending primary control in Illinois, Nebraska, and Ohio.

EVANS, R. T.

Assistant T

Has charge of a party in the Grand Canyon surveying the Shinnemo quadrangle.

FARMER, R. A.

T

Has charge of level work in vicinity of Loyalton, California, and in Sierra Forest Reserve.

FERRISS, H. R.

Fie

In charge of topographic party in Sacramento, California.

FLETCHER, L. C. Topographer.

Adjusting level notes, Washington, D. C.

FLOCKER, I. M. Topographic Aid.

Assisting H. L. Johnston in topographic work in the Millerstown quadrangle, Pennsylvania.

FLOORE, S. P. Topographic Aid.

Assisting Frank Tweedy, topographer, in topographic mapping at Fort Collins, Colorado.

FOWLER, A. T. Assistant Topographer.

Has charge of party engaged in topographic work in the Sun Prairie, Cross Plains, and Mazomanie quadrangles, Wisconsin.

GANNETT, S. S. Geographer.

Has charge of computing section, Washington, D. C., and supervisory charge of field work of primary control in the eastern division.

GAYETTY, J. I. Assistant Topographer.

Has charge of party engaged in topographic work in the Port Leyden quadrangle, New York.

GOODLOVE, C. W. Topographer.

Has charge of party engaged in topographic work in the Brookville and West Manchester quadrangles, Ohio.

GRAFF, FRED, JR. Topographic Aid.

Assisting G. S. Smith in topographic work in the Adirondacks, New York.

GRIFFIN, W. H. Topographer.

Has charge of a party engaged in topographic work in the London and Blanchester quadrangles, Ohio.

GRIEWOLD, W. T.**Topographer.**

Has charge of a party engaged in topographic and geologic work in the Claysville and Sewickley quadrangles, Pennsylvania.

HACKETT, MERRILL.**Topographer.**

Has charge of party engaged in topographic work in the Arlington and Upper Sandusky quadrangles, Ohio.

HALL, W. C.**Topographer.**

Has charge of a party engaged in making a trigonometric survey of the crest line of Niagara Falls, N. Y. On completion of this he will have charge of a party engaged in topographic work in the Hanover and Sunapee quadrangles, New Hampshire and Vermont.

HANNEGAN, DUNCAN.**Topographer.**

Has charge of party engaged in topographic work in the Cowee quadrangle, North Carolina-South Carolina, and in the Baton Rouge quadrangle, Louisiana.

HARGER, W. G.**Topographic Aid.**

Assisting T. F. Slaughter in topographic work in The Forks quadrangle, Maine.

HARRISON, D. C.**Topographer.**

In charge of party engaged in topographic work in the Jefferson, Andover, and Chagrin Falls quadrangles, Ohio.

HARRISON, J. P.**Field Assistant.**

In charge of topographic party working in the Olancha quadrangle, California.

HARTMANN, CHAS., Jr.**Topographic Aid.**

Assisting W. C. Hall in topographic work in the Hanover and Sunapee quadrangles, New Hampshire and Vermont.

- HASSAN, A. F. Topographer.
Has charge of map work of the western division of topography in the office, Washington, D. C.
- HAWKINS, G. T. Topographer.
Has charge of a party engaged on field work of primary control in Missouri, Pennsylvania, and Wisconsin.
- HERRON, W. H. Topographer.
Has charge of parties surveying two quadrangles in vicinity of Sumpter, Oreg.
- HODGESON, H. H. Assistant Topographer.
Has charge of party engaged in topographic work in vicinity of Guthrie, Okla.
- HOOPES, C. L. Topographic Aid.
Assisting Hersey Munroe in topographic work in Missouri.
- IRELAND, E. I. Assistant Topographer.
Has charge of party engaged in topographic work in the Arnoldsburg and Spencer quadrangles, West Virginia.
- IRVINE, CHESTER. Field Assistant.
Has charge of topographic party mapping the Belle Fourche quadrangle, South Dakota.
- JENNINGS, J. H. Topographer.
Has supervision of topographic work in New York and New England, and direct charge of a party engaged in topographic work in the central counties of New York.
- JOHNSTON, H. L. Assistant Topographer.
In charge of topographic work in the Millerstown quadrangle, Pennsylvania.

JONES, OSCAR. Topographer.

Has charge of party engaged in topographic work in the Talbotton quadrangle, Georgia.

JOY, F. E. U. S. Surveyor.

Has charge of party engaged in locating and marking the boundaries of the Payson and Logan forest reserves, Utah.

KENDALL, C. B. Field Assistant.

In charge of a party engaged in extending primary control in Indiana, Mississippi, Louisiana, North Carolina, and South Carolina.

LEOPOLD, L. S. Assistant Topographer.

In charge of topographic work in the Pomeroy and Keno quadrangles, Ohio-West Virginia.

LIBBY, R. L. Field Assistant.

Has charge of a party running precise levels in Virginia and Iowa.

LLOYD, W. J. Topographer.

Has charge of party engaged in topographic work in the Eldorado and New Haven quadrangles, Illinois.

LOVELL, W. H. Topographer.

Has charge of party engaged in extending primary control in Pennsylvania, Virginia, and West Virginia.

MANNING, V. H. Topographer.

Has supervisory charge of topographic work in Maryland, Virginia, North Carolina, South Carolina, and Georgia, and immediate charge of a party engaged in topographic work in the Charlotte quadrangle, North Carolina.

MARSHALL, R. B.

Geographer.

Has supervisory charge of parties engaged in topographic work in California and southern Oregon. Address, Sacramento, Cal.

MATTHES, F. E.

Topographer.

Has charge of a party engaged in the topographic mapping of Yosemite Valley, California.

MCBETH, J. F.

Assistant Topographer.

Has charge of party engaged in topographic work in the San Cristobal quadrangle, Colorado.

MCDONALD, H. L.

Topographic Aid.

Assisting L. S. Leopold in topographic work in the Pomeroy and Keno quadrangles, Ohio-West Virginia.

MCKINNEY, R. C.

Topographer.

Has charge of a party engaged in topographic work in the South Charleston and Bluffton quadrangles, Ohio.

McLAUGHLIN, FRED.

Assistant Topographer.

In charge of party engaged in surveying for the Frisco Special map, Utah; and later for the Iron Ore Special map, Utah.

MCNAIR, E. L.

Topographer.

Has charge of party engaged in extending primary control in Arkansas, Illinois, and New York.

MEADE, A. P., Jr.

Topographic Aid.

Assisting G. S. Smith on topographic work in the Adirondacks, New York.

MILLER, W. L.

Topographer.

Has charge of a party engaged in topographic work in the Saluda and Yorkville quadrangles, North Carolina-South Carolina.

- MONCURE, T. H. Topogr.
Assisting V. H. Manning in topographic work in the Charlotte quadrangle, North Carolina.
- MULDROW, ROBERT. Top
Has supervisory charge of parties engaged in topographic work in Wisconsin, Minnesota, and Dakota, and immediate charge of a party working in Sparta, Wisconsin, and the Chaska, Minnesota quadrangles.
- MUNN, M. J. Assistant Top
Has charge of a party engaged in topographic work in the Claysville quadrangle, Pennsylvania.
- MUNROE, HERSEY. Top
Has supervisory charge of parties engaged in topographic work in Arkansas, Missouri, Iowa, Nebraska, and direct charge of a party engaged in topographic work in the Forsythe and Shelbyville quadrangles, Missouri, and the Nebraska City quadrangle, Nebraska-Iowa.
- MURLIN, A. E. Top
Has charge of a party engaged in topographic work in the Marsh Peak quadrangle, Utah.
- NELSON, C. L. Assistant Top
Has charge of a party engaged in topographic work in the Mount Whitney quadrangle, California.
- OLIVER, A. I. Assistant Top
Has charge of a party engaged in triangulation and topographic work in the Olancha quadrangle, California.
- PIKE, ALBERT. Top
Has charge of a party engaged in topographic work in the Springfield, Champaign, and Urbana quadrangles, Illinois.

- REINICK, R. H. Topographic Aid.
Assisting E. I. Ireland in topographic work in West Virginia.
- RENSHAWE, J. H. Geographer.
Geographer in charge of inspection of topography.
Permanent address, Washington, D. C.
- ROBERTS, A. C. Topographer.
Has charge of party engaged in topographic work in the Neshannock quadrangle, Pennsylvania.
- ROBERTSON, R. B. Field Assistant.
Has charge of party engaged in extending triangulation in northern Washington.
- SADLER, C. L. Assistant Topographer.
Has charge of a party engaged in topographic work in the Des Moines quadrangle, Iowa.
- SARGENT, R. H. Assistant Topographer.
Is engaged in completing the survey of the Cottonwood Special district, Utah, and later will carry triangulation over the quadrangle north of the Jemes quadrangle, New Mexico.
- SEARLE, A. B. Topographer.
Has charge of party doing topographic work in the Pullman quadrangle, Washington.
- SEMPER, C. H. Levelman.
Has charge of level party working near Sacramento, California.
- SINCLAIR, J. H. Topographic Aid.
Has charge of topographic mapping of the Thornton quadrangle, West Virginia.

SLAUGHTER, T. F. Assistant Topographer.

Has charge of party engaged in topographic work in The Forks quadrangle, Maine.

SMITH, G. S. Topographer.

Has charge of parties engaged in topographic work in the Loon Lake, Canton, and Potsdam quadrangles, New York.

SMITH, L. S. Topographic Aid.

Assisting C. E. Cooke in topographic work in Kentucky.

STAACK, J. G. Topographic Aid.

Assisting B. Duke in topographic work in the Bismarck quadrangle, North Dakota.

STEWART, B. D. Topographic Aid.

Has charge of party engaged in reconnaissance survey in southern Nevada.

STILES, ARTHUR. Topographer.

Has charge of party engaged in topographic work in the Tesla quadrangle, California.

STONER, S. N. Topographic Aid.

Has charge of party engaged in topographic work in the Olancha quadrangle, California.

STRANAHAN, WILLIAM. Assistant Topographer.

Has charge of party engaged in topographic work on the Goldfield Special map, Nevada.

SUTTON, FRANK. Topographer.

Has supervisory charge of topographic work in Ohio and Michigan, and direct charge of a party engaged in topographic work in northeastern part of Ohio.

- SYLVESTER, A. H. Topographer.
Has charge of party engaged in topographic work in the Bridgeport quadrangle, California.
- THOMPSON, A. H. Geographer.
Has charge of office for the topographic branch, Washington, D. C.
- THORN, W. H. U.S. Surveyor.
Has charge of party engaged in locating and marking the boundaries of the Santa Barbara and San Jacinto forest reserves, California.
- TUCKER, L. E. Topographic Aid.
Assisting G. S. Smith in topographic work in the Adirondacks, New York.
- TUFTS, W. O. Assistant Topographer.
Has charge of a party engaged in topographic work in the Stony Creek and Goshen quadrangles, New York.
- TWEEDY, FRANK. Topographer.
Has charge of parties engaged in topographic work in the Fort Collins and Boulder quadrangles, Colorado.
- URQUHART, C. F. Topographer.
Has charge of party engaged in extending triangulation in the Sierra Forest Reserve, California.
- WALKER, A. M. Topographer.
Has supervisory charge of topographic work in West Virginia, and direct charge of a party engaged in topographic work in the Kingwood and Bellington quadrangles, West Virginia.
- WALKER, J. P. U. S. Surveyor.
Has charge of party for locating and marking the Yosemite National Park boundary line, California.

- WHEAT, J. H. Topographer.
Has charge of map work of the eastern division of topography, in office, Washington, D. C.
- WHITMAN, J. M. Topographer.
Has charge of party engaged in topographic work in the Marquette quadrangle, Michigan, and the Belleville quadrangle, Illinois.
- WILSON, H. M. Geographer.
Has charge of the eastern division of topography. Permanent address, Washington, D. C.
- YOUNG, GILBERT. Assistant Topographer.
Has charge of a party engaged in topographic work in the Eden, Bath, and Port Jervis quadrangles, New York.

HYDROGRAPHIC BRANCH.

BAKER, S. K. Hydrographic Aid.

Engaged in investigation of quality of water for purposes of irrigation in Arizona and New Mexico, under direction of M. O. Leighton.

BARROWS, H. K. Engineer.

In charge of stream measurements in New England.

BEEBE, H. R. Field Assistant.

Assisting in hydrographic work in New York.

BOLSTER, R. H. Assistant Engineer.

Assisting in computations at Washington, D. C.

BOWMAN, ISAIAH. Hydrologic Aid.

Will conduct an investigation of methods of drilling wells.

BRENNAN, M. S. Engineering Aid.

Assisting in hydrographic work in Wisconsin.

CHANDLER, E. F. Assistant Engineer.

Assisting in hydrographic work in North Dakota.

CLAPP, F. G. Geologic Aid.

Will investigate artesian water problems in Florida.

CLAPP, S. K. Assistant Engineer.

Assisting in hydrographic work in Indiana, Illinois,

Iowa, and Missouri.

CLARK, W. B. Assistant Engineer.
In charge of river measurements in California.

In charge of river measurements in California.

COMSTOCK, H. D. **Engineering Aid.**

Assisting in hydrographic work in South Dakota.

COVERT, C. C. **Assistant Engineer.**

Assisting in hydrographic work in New York.

CRIDER, A. F. **Hydrologic Aid.**

Will investigate underground waters of northeastern Arkansas.

DARTON, N. H. **Geologist.**

In charge of western section of hydrology. Will conduct geologic field work, mostly in central and southeastern Wyoming, and supervise the operations of his division, later in the season making visits to the fields of work of various assistants.

DOLK, R. B. **Assistant Engineer.**

In charge of methods and results of field assay of water, under direction of M. O. Leighton.

DRANE, B. S. **Engineering Aid.**

Assisting in hydrography in North Carolina, South Carolina, Georgia, and Florida.

ELLIS, E. E. **Geologic Aid.**

Will investigate the underground waters of Missouri and Connecticut.

FARISH, W. A. **Assistant Engineer.**

In charge of river measurements in Arizona.

FISHER, C. A. **Assistant Geologist.**

Will be with N. H. Darton in central Wyoming during a portion of the season, and then continue field work in the southern portion of the Bighorn basin, Wyoming.

FOLLANSBEE, ROBERT. **Assistant Engineer.**

Assisting in computations in Washington, D. C.

- GILES, J. M.** Assistant Engineer.
In charge of river measurements in parts of Oklahoma, Indian, and New Mexico Territories.
- GREGORY, H. E.** Assistant Geologist.
Will investigate the underground waters of Connecticut.
- GROVER, N. C.** Engineer.
In charge of stream measurements in New Jersey, Pennsylvania, Maryland, Virginia, and West Virginia.
- HALL, M. R.** Hydrographer.
In charge of stream measurements in Southeastern States.
- HALL, W. E.** Hydrographic Aid.
Assisting in hydrographic work in Southeastern States.
- HANNA, F. W.** Assistant Engineer.
In charge of stream measurements in Illinois, Indiana, Kentucky, Ohio, Wisconsin, Iowa, Minnesota, Missouri, North Dakota, and the northern peninsula of Michigan.
- HARLEY, G. F.** Engineering Aid.
Assisting in computations in Washington, D. C.
- HINDERLIDER, M. C.** Engineer.
In charge of hydrographic work in Colorado, Wyoming, Nebraska, South Dakota, Kansas, northern Oklahoma, Indian Territory, New Mexico, and Uinta Indian Reservation.
- HORTON, A. H.** Engineer.
Assisting in hydrographic work in the Middle Atlantic States.

Field Assignments.

- HORTON, R. E. Hydrographer.
In charge of river measurements in New York and lower peninsula of Michigan.
- HOYT, J. C. Engineer.
In charge of computations in Washington, D. C.
- LANDEN, IVAN. Field Assistant.
Assisting in hydrographic work in Oregon.
- LA RUE, E. C. Engineering Aid.
Assisting in hydrographic work in Idaho.
- LKE, W. T. Assistant Geologist.
Will continue his investigations of underground water conditions, mainly in reclamation areas in the Rio Grande Valley in New Mexico.
- LEIGHTON, M. O. Hydrographer.
In charge of division of hydro-economics. Headquarters, Washington, D. C.
- LEWIS, S. J. Assistant Engineer.
Engaged in hydro-economic investigations in West Virginia, Kentucky, and Kansas.
- LIGHTFOOT, W. J. Assistant Engineer.
Assisting in hydrographic work in Washington.
- LYMAN, H. L. Engineering Aid.
Assisting in hydrographic work in Washington, D. C.
- MEEKER, R. I. Assistant Engineer.
Assisting in hydrographic work in Colorado.
- MENDENHALL, W. C. Geologist.
Will continue in charge of the investigations of underground water supplies in central and southern California.

Hydrographic Branch.

43

- MITCHELSON, A. T.** Hydrographic Aid.
Assisting in hydrographic work in the Southeastern States.
- MORSE, H. M.** Engineering Aid.
Assisting in hydrographic work in Montana.
- MURPHY, E. C.** Engineer.
Inspector of stream measurements in all parts of the country.
- NORCROSS, T. W.** Hydrographic Aid.
Assisting in hydrographic work in New England.
- NORTON, W. H.** Field Assistant.
Will investigate underground waters of Iowa.
- PARKER, H. N.** Assistant Hydrographer.
Engaged in hydro-economic investigations in Pennsylvania, New Jersey, Delaware, Maryland, Virginia, and West Virginia.
- PARSHALL, A. J.** Hydrographer.
Assisting in stream measurements in Wyoming.
- PETERSON, O. W.** Engineering Aid.
Assisting in stream measurements in California.
- PRATT, R. W.** Assistant Engineer.
Assisting in stream measurements in Ohio.
- PRESSEY, F. E.** Assistant Engineer.
Assisting in stream measurements in New England.
- RICHARDSON, G. B.** Assistant Geologist.
Will continue his investigations of the underground water conditions in Utah, operating mainly in Sevier Valley.

SANFORD, SAMUEL. Hydrologic Aid.

Will collect samples and records of wells and borings throughout the United States.

SAWYER, W. C. **Assistant Engineer.**

In charge of stream measurements in Oregon.

SHEPARD, E. M. Field Assistant.

Will investigate underground waters of Missouri.

SIEBENTHAL, C. E. Assistant Geologist.

Will spend the early part of the summer in Washington, completing reports, and then take up the investigation of the geology and underground water conditions in the Sun River reclamation area in Montana.

SIMPSON, J. E. Field Assistant.

Will investigate underground waters of Iowa.

SOPER, R. C. Engineering Aid.

Assisting in stream measurements in the Middle Atlantic States.

STABLER, HERMAN. Engineering Aid.

Engaged in hydro-economic investigations in Ohio, under cooperative agreement with Ohio State Board of Health.

STEPHENSON, L. W. Field Assistant.

Will investigate underground waters of northeastern Arkansas.

STEWARD, W. G. Assistant Engineer.

Assisting in meter rating, computations, and designs in Washington, D. C.

STOCKMAN, L. R. Assistant Engineer.

In charge of stream measurements in Montana.

Hydrographic Branch.

45

TAYLOR, T. U. Hydrographer.

In charge of hydrographic work in Texas.

WEEKS, E. T. Field Assistant.

Assisting in hydrographic work in New York.

Localities of Field Work.

LOCALITIES OF FIELD WORK, SEASON 1905.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Alabama	State.	Stream measurements.	M. R. Hall, assisted by W. E. Hall, B. S. Drane, and others.
	Appalachian Valley.	Investigation of iron ores, clays, and cement materials.	E. C. Ekel, assisted by R. S. Bassler.
	Bessemer and Birmingham district.	Topographic.	H. B. Blair, assisted by C. D. S. Clarkson.
	Birmingham district.	Geologic areal and economic survey and special reports on coal and iron deposits.	Charles Butts, assisted by E. M. Dawson, Jr.
	Opelika.	Primary control.	E. L. McNair.
	Beaver Creek.	Investigation of gold placers.	R. W. Stone.
	Berners Bay.	Supplementary study of ore deposits.	C. W. Wright.
	Centreville Bay.	Geologic and topographic surveys.	G. C. Martin, geologist, assisted by A. G. Maddren; E. G. Hamilton, topographer; A. F. Hamilton, topographer; A. F. Hill.
	Herrenjeen Bay.	Investigation of coal field.	Sidney Paige.
	Ketchikan district.	Investigation of ore deposits.	F. E. Wright, assisted by C. W. Wright.
	Kodiak Island.	Economic and stratigraphic studies.	Sidney Paige.
	Matanuska region.	Geologic reconnaissance of Matanuska coal field.	G. C. Martin.

Localities of Field Work.

47

State.	Locality or quadrangle.	Kind of work.	In charge of—
Alaska -----	Nome region.	Study of geology and mineral resources. Geologic reconnaissance and investigation of mineral resources. Supplementary investigations in the more important placer districts. Detailed topographic survey.	F. H. Moffit, assisted by F. L. Hess. U. S. Grant, assisted by Sidney Paige. F. H. Moffit, assisted by F. L. Hess. T. G. Gerding, assisted by W. B. Corse and R. A. Yoder.
	Prince William Sound.	Stratigraphic and paleontologic investigations.	E. M. Kindle, in cooperation with F. E. Wright.
	Seward Peninsula.	Geologic and topographic surveys and investigations of mineral resources.	A. H. Brooks.
	Solomon River region.		
	Southeastern.		
	Southeastern, Controllor Bay, Matanuska region, Yakutat Bay, Alaska Peninsula, Seward Peninsula, Yukon-Tanana region.	Topographic and geologic surveys between Circle City and Chena. Investigation of ore deposits. Geologic reconnaissance. Supplementary investigation of tin deposits.	D. C. Wetherpoon, topographer, assisted by R. B. Oliver; R. W. Stone, geologist. F. E. Wright, assisted by C. W. Wright. R. S. Tarr, assisted by B. S. Butler and Lawrence Martin. F. L. Ifre.
	West of Fairbanks—Circle City trail.		
	Wrangell region, southeastern.		
	Yakutat Bay.		
	York region.		

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Alaska	Yukon-Tanana region.	Geologic reconnaissance between Dawson and Fairbanks.	L. M. Prindle, assisted by A. Knopf.
Arizona	State.	Investigation of quality of water.	S. K. Baker.
	Do.	Stream measurements.	W. A. Faribault.
	Do.	Mineral statistics.	V. C. Heikes.
	Do.	Investigation of Tombstone mining district, and reconnaissance economic study of mining districts in general.	F. L. Ransome, assisted by W. H. Einmons.
	Florence, Grind Canyon,	Topographic.	T. M. Bannon.
	Tombstone.	Do.	R. T. Evans.
Arkansas	State.	Economic survey.	F. L. Ransome, assisted by W. H. Einmons.
	Eureka Springs.	Stream measurements.	M. R. Hall.
	Fort Smith.	Geologic areal and economic survey for folio publication.	A. H. Purdie.
	Mississippi embayment.	Primary control.	E. L. McSair.
	Do.	Study of geology, mineral resources, and underground waters.	E. C. Eckel, assisted by A. F. Crider.
	Northeastern.	Investigations of stratigraphy and paleontology.	T. W. Vaughan.
California	State.	Investigation of underground water.	A. F. Crider and L. W. Stephenson.
		Stream measurements.	W. R. Clapp.

State.	Locality or quadrangle.	Kind of work.	In charge of—
California -----	State.	Topographic, field and office.	R. B. Marshall.
	Do.	Mineral statistics.	C. G. Yale.
	Bridgeport.	Topographic.	A. H. Sylvester.
	Central and southern.	Investigation of underground water supplies.	W. C. Mendenhall.
	Mount Whitney.	Topographic.	G. R. Davis and C. L. Nelson.
	Northern.	Study of stratigraphy of portions of Klamath Mountains.	J. S. Diller.
	Olancha.	Topographic.	S. N. Stoner.
	Do.	Do.	J. P. Harrison.
	Do.	Topographic and triangulation.	A. I. Oliver.
	Owens Valley.	Leveling.	R. A. Farmer.
	Sacramento Valley.	Topographic.	C. H. Birdeye.
	Do.	Do.	E. P. Davis.
	Do.	Do.	H. R. Ferriss.
	Do.	Study of hydraulic problems.	G. K. Gilbert, in cooperation with hydrographic branch.
	Do.	Leveeling.	C. H. Semper.
	San Jacinto and Santa Barbara Forest reserves.	Boundary survey.	W. H. Thorn.
	Sierra Forest Reserve.	Leveeling.	R. A. Farmer.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
California	Sierra Forest Reserve.	Trigonulation.	C. F. Vugbhart.
	Sierra Nevada.	Investigation of glacial geology in the high Sierras.	W. D. Johnson, under supervision of T. C. Chamberlin.
	Southern.	Completion of report on oil fields.	G. H. Eldridge.
	Stanford University and vicinity.	Geologic survey for folio publication.	J. C. Branner, assisted by J. F. Newsom.
Colorado	Tesla.	Topographic.	Arthur Stiles.
	Yosemite National Park.	Boundary survey.	J. P. Walker.
	Yosemite Valley.	Topographic.	F. E. Matthes.
	State.	Stream measurements.	M. C. Hinderliter.
Leadville.	Do.	Mineral statistics.	W. S. Ward.
	Boulder.	Topographic.	Frank Tweedy.
	Fort Collins.	Do.	Frank Tweedy, assisted by S. P. Floor.
Lake City and Englewood Mountain.	Engineering.	Completion of geologic survey for folio publication.	Whitman Cross, assisted by W. H. Emmons, L. H. Wooley, and G. F. Kay.
Northwestern.	Review of economic geology.	Reconnaissance survey of Tampa coal field.	S. F. Emmons, assisted by J. D. Irving.
			N. M. Fennerman and H. S. Gale, under supervision of M. R. Campbell.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Colorado	San Cristobal.	Geologic reconnaissance. Topographic. Stream measurements.	Albert Johannsen, under supervision of Whitteman Cross.
Connecticut	State.	Investigation of underground waters.	J. F. McBeth.
	Do.	Study of glacial geology for folio publication.	H. K. Barrows, assisted by T. W. Norcross.
	Do.	Hydro-economic investigations.	H. E. Gregory and E. E. Ellis.
Delaware	State.	Completion of report on phosphate deposits.	F. B. Taylor, under supervision of T. C. Chamberlin.
Florida	Do.	Investigation of artesian water problems.	H. N. Parker.
	Do.	Stream measurements.	G. H. Eldridge.
	Do.	Do.	F. G. Clapp.
Georgia	Cartersville.	Topographic.	M. R. Hall, assisted by W. E. Hall, B. S. Drane, and others.
	Cartersville, Suwanee, Dahlonega, and Ellijay.	Geologic areal, structural, and economic surveys for folio publication.	M. R. Hall, assisted by W. E. Hall, B. S. Drane, and others.
	Dahlonega.	Topographic.	W. N. Brown.
	Do.	Areal and economic surveys for folio publication.	Laurence La Forge, assisted by D. B. Sterrett and L. A. Kolbe.
			W. N. Brown.
			Arthur Keith.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Georgia	Oreutta. Talbotton.	Primary control. Topographic.	E. L. McNair. Oscar Jones, assisted by J. W. Bagley.
Idaho	Io. Cataldo. Do. State.	Primary control. Mineral statistics. Stream measurements. Topographic.	E. L. McNair. V. C. Heikes. E. C. La Rue. Ralph Cowgill.
	North and east of Coeur d'Alene district.	Geologic reconnaissance.	F. C. Calkins, assisted by D. F. McDonald.
Pearl, Hailey, Mucky and Ketchum mining districts.	Pearl, Hailey, Mucky and Ketchum mining districts.	Reconnaissance study of economic geology.	J. W. Bentwell.
Illinois	Priest River Forest Reserve. State.	Triangulation. Stream measurements.	A. F. Dennington. F. W. Hanna, assisted by S. K. Clapp.
	Bellefonte. El Dorado and New Haven.	Topographic.	J. M. Whitman. W. J. Lloyd.
	Springfield.	Primary control.	E. L. McNair.
	Urbana and Champaign.	Topographic.	Albert Pike. J. R. Ellis. Albert Pike.
	Do.	Primary control.	
	Do.	Topographic.	

Localities of Field Work.

53

State,	Locality or quadrangle.	Kind of work.	In charge of—
Indiana -----	State.	Stream measurements.	F. W. Hanna, assisted by S. K. Clapp.
Indian Territory.	New Albany.	Primary control.	C. B. Kendall.
	Territory.	Stream measurements.	J. M. Giles.
	Northeastern.	Special report on oil fields.	J. A. Taff, assisted by C. N. Smith.
Iowa-----	Novata.	Geologic area; economic survey for folio publication.	J. A. Taff, assisted by C. N. Smith.
	State.	Investigation of underground waters.	W. H. Norton and H. E. Simpson.
Kansas-----	Do.	Stream measurements.	F. W. Hanna, assisted by S. K. Clapp.
	Do.	Precise levels.	R. L. Libby.
	Des Moines.	Topographic.	M. C. Hindleidler, assisted by W. G. Russell.
	Nebraska City.	Do.	C. I. Sadler.
	State.	Stream measurements.	Hessey Monroe.
Kentucky -----	Do.	Hydro-economic investigations.	S. J. Lewis.
	State.	Stream measurements.	F. W. Hanna, assisted by S. K. Clapp.
	Do.	Hydro-economic investigations.	S. J. Lewis.
	Kenova.	Geologic area; and economic surveys for folio publication.	G. H. Ashley and W. G. Phalen.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Kentucky	Kentucky.	Investigation of paleobotany and stratigraphy. Topographic.	C. E. Cooke, assisted by J. S. B. Daingerfield and L. S. Smith.
Louisiana	Lonville, Prospect River, town, and Morganfield.	Study of geology, mineral resources, and underground water. Stream measurements.	E. C. Eckel, assisted by A. F. Rider.
Louisiana	Baton Rouge.	Topographic.	M. R. Hall, assisted by W. E. Hall, B. S. Drane, and others.
Maine	Do.	Primary control.	Duncan Hannegan.
	Do.	Stream measurements.	C. B. Kendall.
	Do.	Investigation of granite quarries.	H. K. Barrows, assisted by F. E. Prosser.
	North-eastern.	Investigation of Devonian stratigraphy and paleontology.	T. N. Dale, under supervision of G. O. Smith.
	Rockland and Mount Desert.	Geologic area and economic surveys for folio publication.	H. B. Williams.
	The Forks.	Topographic.	G. O. Smith, assisted by E. S. Badin and C. W. Brown, in cooperation with the State.
Maryland	State.	Geologic investigation in Atlantic Coastal Plain for folio publication, and collection of mineral statistics.	T. F. Shaughier, assisted by W. G. Harger.
			W. B. Clark.

Localities of Field Work.

55

State.	Locality or quadrangle.	Kind of work.	In charge of—
Maryland.-----	State.	Stream measurements.	N. C. Grover, assisted by A. H. Horton and others.
	Do.	Hydro-economic investigations. Geologic areal and economic surveys for folio publication.	H. N. Parker. G. W. Stose.
	Pawpaw and Hancock.	Topographic.	
	Relay and Laurel.		W. M. Beaman.
	Western.	Investigations of stratigraphy and paleontology of Ordovician and Silurian formations, with special reference to cement materials.	E. O. Ulrich, assisted by R. S. Bassler.
Massachusetts --	State.	Stream measurements.	H. K. Barrows, assisted by T. W. Norcross and others.
	Housatonic and Litchfield.	Study of glacial geology.	
	Ware and Quinsigamond.	Geologic areal and economic surveys for folio publication.	F. B. Taylor, under supervision of T. C. Chamberlin.
Michigan.-----	Areas adjacent to Lakes Huron and Superior.	Investigations of glacio-lacustrine phenomena.	B. K. Emerson.
	Lower Peninsula.	Stream measurements.	F. B. Taylor, under supervision of T. C. Chamberlin.
	Marquette.	Topographic.	R. E. Horton.
	Northern Peninsula.	Study of Pleistocene geology.	J. M. Whitman.
			Frank Leverett, F. B. Taylor, and I. C. Russell, under supervision of T. C. Chamberlin.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Michigan.	Upper Peninsula.	Stream measurements.	F. W. Hause, assisted by S. K. Clapp.
Minnesota.	State.	Do.	F. W. Hause, assisted by S. K. Clapp and others
Nebraska.	State.	Topographic.	Robert Mulford
Mississippi.	State.	Stream measurements.	N. R. Hall, assisted by W. E. Hall, H. S. Drane, and others
Jackson.		Topographic.	H. H. Blair.
Missouri.	Do.	Primary control.	C. H. Kendall.
	State.	Investigation of underground waters.	E. F. Ellis and F. M. Shepard
	Do.	Investigation of underground waters.	F. W. Hause, assisted by S. K. Clapp and others.
Fayette and Shelbyville.	Do.	Stream measurements.	Hervey Munroe, assisted by C. G. Anderson and C. L. Hooper.
St. Louis.	Shelbyville.	Fuel testing.	J. A. Holmes and K. W. Parker.
	Do.	Primary control.	G. T. Hawkins.
		Topographic.	Hervey Munroe, assisted by C. L. Hooper.
Southwestern.		Study of stratigraphy and paleontology of carbonaceous formations, with reference to associated fossil and shale.	G. H. Clark, under supervision of H. P. Bell.

Localities of Field Work.

57

State.	Locality or quadrangle.	Kind of work.	In charge of—
Montana -----	State.	Stream measurements. Mineral statistics.	L. R. Stockman, assisted by H. M. Morse and others.
	Do.	Completion of geologic report.	A. N. Winchell.
	Butte mining district.	Reconnaissance investigation of lignites.	W. H. Weed
	Eastern.		M. R. Campbell, assisted by A. G. Leonard.
	Philipsburg -----	Topography and triangulation.	H. L. Baldwin, Jr.
	Do.	Topographic.	J. E. Blackburn.
	Sun River area -----	Investigations of geology and underground water conditions.	C. E. Siebenhaar.
	Western.	Study of stratigraphy and paleontology.	C. D. Walcott.
	Yellowstone National Park.	Completion of monograph on Yellowstone National Park.	Arnold Hague.
Nebraska-----	State.	Stream measurements.	M. C. Hinderliter.
	Nebraska City.	Topographic.	Hersey Monroe, assisted by C. L. Seitter.
Nevada-----	State.	Stream measurements.	L. H. Taylor.
	Do.	Mineral statistics.	C. G. Yale.
	Goldfield mining district.	Economic investigation.	J. E. Spurr, assisted by G. H. Garrey and Foster Hewitt.
	Goldfield.	Reconnaissance topographic.	R. H. Chapman.
	Do.	Topographic.	B. D. Stewart.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Nevada	Goldfield. Southern.	Re-tailed topographic. Geologic reconnaissance.	William Stranahan. S. H. Ball, under supervision of J. E. Spurr.
	Do.	Reconnaissance and economic and geologic survey of mining districts.	J. E. Spurr, assisted by G. E. Garrett and Foster Hewitt.
New Hampshire	State.	Stream measurements.	H. K. Barrows, assisted by F. E. Pressey, T. W. Norcross, and others.
	Sunapee and Hanover.	Topographic. Stream measurements.	W. C. Hall, assisted by C. Hart- mann, Jr. N. C. Grover, assisted by A. H. Horton and others.
New Jersey	State.	Hydro-economic investigations. Mineralogic investigation.	H. N. Parker. Charles Pasche.
	Do.	Geologic area and economic survey and preparation of reports on zinc and iron ore deposits.	A. C. Spencer.
	Franklin Furnace dis- trict.	Geologic area, structural, and eco- nomic surveys for folio publication.	W. S. Bayley.
	Do.	Investigation of quality of water.	S. K. Baker.
	Raritan, Morristown, and Easton.	Mineral statistics.	P. A. Jones.
New Mexico	State.	Reconnaissance economic investiga- tion of mining districts.	Waldemar Lindgren, assisted by L. C. Graton.
	Do.		

Localities of Field Work.

59

State.	Locality or quadrangle.	Kind of work.	In charge of—
New Mexico ----	Allbuquerque to Silver City. Jemez, north of. Northern. Do.	Precise leveling. Triangulation. Stream measurements. Reconnaissance investigation of the Gallup coal field. Geologic reconnaissance.	M. S. Bright. R. H. Sargent. M. C. Hinderliter. F. C. Schrader, assisted by M. K. Shaler, under supervision of M. R. Campbell. Whitman Cross, assisted by W. H. Emmons, L. H. Woolsey, and G. F. Key. Willis T. Lee.
	Northwestern.	Investigations of underground water conditions. Stream measurements.	J. M. Giles.
	Rio Grande Valley.	Do.	R. E. Horton, assisted by C. C. Covert, H. R. Beebe, and others.
	Southern.	Topographic. Do.	J. H. Jennings. C. C. Bassett.
New York -----	Cooperstown, Winfield, and Delhi. Eden and Bath. Goshen, Port Jervis, and Stony Creek. Loon Lake, Can ton, Potsdam, Gover- near, and Black Lake. Port Leyden.	Do. Do. Do. Do.	Gilbert Young. W. O. Tufts. G. S. Smith, assisted by A. P. Meade, Jr., Fred Graff, Jr., and L. E. Tucker. J. I. Gayetty.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
New York -----	Western.	Investigation of Devonian stratigraphy and paleontology. Stream measurements.	R. S. Williams.
North Carolina -----	State.		M. R. Hall, assisted by B. S. Drake and others.
	Charlotte and Matthews.	Primary control.	C. B. Kendall.
	Do.	Topographic.	V. H. Manning, assisted by T. H. Monroe.
	Covington.	Do.	Duncan Hannegan.
	Gatesville, Smithfield, Winston, and Clinton.	Do.	Robert Coe.
	Do.	Primary control.	C. B. Kendall.
	Highland Forest.	Economic geologic survey.	Arthur Keith, in cooperation with the State, and assisted by D. B. Steerrett.
	Roan Mountain and Morganton.	Completion of geologic surveys.	Arthur Keith.
	Salsada.	Topographic.	W. L. Miller.
	Western.	Areal and economic surveys for state publication.	Arthur Keith.
North Dakota -----	State.	Reconnaissance investigation of lignites.	M. R. Campbell, assisted by A. G. Leonard.
	Do.	Stream measurements.	F. W. Hanna, assisted by E. F. Chandler.

State.	Locality or quadrangle.	Kind of work.	In charge of—
North Dakota---	Bismarck.	Topographic.	Basil Duke, assisted by J. G. Staack.
Ohio -----	State.	Stream measurements.	F. W. Hanna, assisted by S. K. Clapp, R. W. Pratt, and others.
	Do.	Hydro-economic investigations, under cooperative agreement with Ohio State Board of Health.	Herman Stabler.
	Do.	Topographic.	Frank Sutton.
	Arlington and Upper Sandusky.	Do.	Merrill Hatchett.
	Brookville and West Manchester.	Do.	C. W. Goodlove.
	Defiance, Henry, Chocoton, and Licking.	Primary control.	J. R. Ellis.
	Jefferson, Andover, and Chagrin Falls.	Topographic	D. C. Harrison, assisted by J. N. Williamson.
	Kenova.	Geologic areal and economic surveys for folio publication.	G. H. Ashley and W. C. Phalen.
	Do.	Investigation of paleobotany and stratigraphy.	David White.
	London and Blanchester.	Topographic.	W. H. Griffin.
	Pomeroy and Kent.	Do.	L. S. Leopold, assisted by H. L. McDonald.
	South Charleston.	Do.	R. C. McKinney.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Ohio -----	Wilkesville.	Topographic.	A. O. Burkland, assisted by W. H. S. Morey.
Oklahoma -----	Guthrie.	Do.	H. H. Hodgeson.
	Northern.	Stream measurements.	M. C. Hinderliter, assisted by W. G. Russell.
Oregon -----	Southern.	Do.	J. M. Giles.
	State.	Do.	W. C. Sawyer, assisted by E. N. Smith and others.
	Portland.	Mineral statistics.	C. G. Yale.
	Southern.	Black sand investigation.	D. T. Day.
Pennsylvania-----	Sumpter.	Study of stratigraphy of Klamath Mountains.	J. S. Diller.
	State.	Topographic.	W. H. Herron.
		Stream measurements.	N. C. Grover, assisted by A. H. Horton and others.
			H. N. Parker.
	Do.	Hydro-economic investigations.	M. R. Campbell, G. H. Ashby, W. T. Gravold, M. J. Munn, A. J. Collier, and F. W. De Wolf, in cooperation with the State.
	Bituminous coal field.	Geologic area and economic surveys of quadrangles for folio publication.	A. J. Collier.
Carnegie.	Cheyenne.	Geologic area and economic survey.	M. J. Munn, assisted by E. W. McKey.
		Topographic and area and economic hydro-economic surveys for folio publication.	

State,	Locality or quadrangle,	Kind of work.	In charge of—
Pennsylvania ---	Couotesville and Phoenixville, Eastern.	Geologic areal and economic survey for folio publication. Investigations of stratigraphy and paleontology of Ordovician and Silurian formations.	Florence Bascom. E. O. Ulrich, assisted by R. S. Bussler.
	Johnstown.	Areal and economic surveys for folio publication.	F. W. DeWolf, under supervis- ion of G. H. Ashley.
	Lamonterville.	Topographic.	I. M. Flocker.
	Millerton.	Do.	H. L. Johnston.
	Neshannock.	Do.	A. C. Roberts.
	New Cumberland and New Holland.	Do.	R. D. Cummin, assisted by H. W. Chelough.
	Northern.	Investigation of Devonian strati- graphy and paleontology.	H. S. Williams.
	Sewickley.	Topographic and areal and economic geologic surveys for folio publica- tion.	W. T. Griswold.
	Suplee.	Topographic.	E. B. Clark.
Rhode Island ---	State.	Stream measurements.	H. K. Barrows.
South Carolina ---	State.	Do.	M. R. Hall, assisted by W. F. Hall, B. S. Drane, and others.
	Charlotte and Matthews.	Topographic.	V. H. Manning, assisted by T. H. Mourure.
	Saluda.	Do.	W. L. Miller.

Localities of Field Work.

State.	Locality or特征.	Kind of work.	In charge of .
North Carolina.	Yorkville and Rockfish. Do.	Primary control. Topographic. Stream measurements.	C. B. Kendall. W. L. Miller.
North Dakota.	State.	Mineral statistics.	M. C. Hungerford, assisted by H. D. Coatsworth.
Do.	Do.	Mineral statistics. Topographic. Stream measurements.	E. P. Porter. Chester Irwin. M. R. Hall, assisted by W. K. Hall and others.
Tennessee.	Belle Fontaine. State.	Study of geology, mineral resources, and underground waters.	E. C. Eckel, assisted by A. F. Crandall.
Texas.	Star.	Investigations of stratigraphy and and paleontology.	T. W. Vaughan.
Utah.	State.	Stream measurements.	T. U. Taylor.
Do.	Do.	Mineral statistics.	V. C. Helker.
Cottonwood.	Do.	Stream measurements.	Geo. I. Swetland, assisted by W. G. Swetland.
Frisco.	Do.	Topographic.	R. H. Sargent.
Iron-ore area.	Do.	Do.	Fred McLaughlin.
Iron County.	Do.	Investigation of iron-ore deposits.	Do.
Logan Forest Reserve.	Do.	Boundary survey.	C. K. Leith.
March Peak.	Do.	Topographic.	P. E. Joy. A. E. Martin.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Utah -----	Payson Forest Reserve. Sevier valley. Southeastern.	Boundary survey. Investigations of underground water conditions. Geologic reconnaissance.	F. E. Joy. G. B. Richardson.
Uinta Indian Reservation. Western. State.	Stream measurements. Study of stratigraphy and paleontology. Stream measurements.	Whitman Cross, assisted by W. H. Emmons, L. H. Woolsey, and G. F. Kay. M. C. Hindreider, assisted by H. S. Reed. C. D. Walcott, assisted by F. B. Weeks. H. K. Barrows, assisted by T. W. Norcross and others.	
Vermont -----	Hanover. Western. State.	Topographic. Survey of crystalline rocks. Stream measurements.	W. C. Hall, assisted by C. Hartman, Jr. T. N. Dale. N. C. Grover, assisted by A. H. Horton and others.
Virginia -----	Do. Appalachian Valley. Natural Bridge. Roanoke River. Stuart.	Hydro-economic investigations. Investigation of iron ores, clays, and cement material. Topographic. Precise levels. Primary control.	H. N. Parker. E. C. Eckel, assisted by Cleveland Abbe, Jr., and R. S. Bassler. V. H. Manning. R. L. Libby. W. H. Lovell.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Virginia	Valley region.	Investigations of stratigraphy and paleontology of Ordovician and Silurian formations, with special reference to iron ores and cement materials.	E. O. Ulrich, assisted by R. S. Bassler.
Washington	Yorktown. State.	Topographic. Stream measurements. Mineral statistics.	W. N. Brown. W. J. Lightfoot. C. G. Yale.
	Do.	Topographic.	Pearson Chapman.
	Bellington. Do.	Topographic and triangulation. Triangulation.	E. C. Barnard. R. B. Robertson.
	Bellington and vicinity. Boundary line.	United States and Canada boundary survey.	E. C. Barnard.
	Pullman. State.	Topographic. Stream measurements.	A. B. Scarle. N. C. Grover, assisted by A. H. Horton and others.
West Virginia	Do.	Hydro-economic investigations.	H. N. Parker and S. J. Lewis.
	Arnoldburg and Spencer. Horton.	Topographic.	E. I. Ireland, assisted by R. H. Renick.
	Kinwood, Bellington. Parsons, and Elkins.	Primary control. Topographic.	W. H. Lovell. A. M. Walker.
	Pawpaw and Hancock.	Geologic areal and economic surveys for folio publication.	G. W. Stose.

Localities of Field Work.

67

State.	Locality or quadrangle.	Kind of work.	In charge of—
West Virginia --	Ripley, Ravenswood, and Point Pleasant. Thornton.	Topographic. Do.	J. R. Eakin. J. H. Sinclair.
Wisconsin -----	State. Lancaster.	Stream measurements. Geologic areal and economic survey for folio publication. Primary control.	F. W. Hanna, assisted by S. K. Clapp and others. E. F. Burchard, assisted by J. R. Bannister, under super- vision of H. F. Bain. G. T. Hawkins.
	Hartford, W. Bend, Bellevue, Milwaukee, Washington, and Shoepire. Southeastern.	Study of Pleistocene geology. Primary control. Topographic. Do.	T. C. Chamberlin, assisted by W. C. Alden. S. S. Gannett. Robert Muldrow. A. T. Fowler.
	Sparta.	Do.	C. A. Fisher.
	Sun Prairie, Madison, State, and Cross Plains.	Investigations of underground water supplies. Stream measurements.	M. C. Hinderliter, assisted by A. J. Parshall.
Wyoming -----	Do.	Do.	E. P. Porter.
		Mineral statistics.	

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
Wyoming -----	Southwestern.	Reconnaissance investigation of oil and coal fields.	A. C. Veatch, assisted by A. R. Schultz, under the supervision of M. R. Campbell.
Yellowstone Forest Reserve.	Yellowstone National Park.	Completion of monograph on Yellow-stone National Park.	T. M. Bannon.
Do.	Do.	Completion of report on hot spring phenomena.	W. H. Weed.
Youngs Peak.	Appalachian coal fields.	Topographic.	T. M. Bannon.
United States -----	Atlantic Coastal Plain.	Study of Potterville flora.	David White.
Do.	Do.	Geologic area and economic surveys for folio publication.	W. B. Clark in cooperation with State Survey of Maryland.
Eastern.	Do.	Completion of reports on copper deposits.	W. H. Weed.
Western.	Do.	Supervision of field and office work of topographic branch.	H. M. Wilson.
Western.	Do.	Do.	K. M. Douglas.
General.	Do.	Collection of samples and records of wells and borings.	Samuel Sanford.
Do.	Do.	Completion of monograph on later Tertiary corals.	T. W. Vaughan.
Do.	Do.	Completion of monograph on the Searropoda.	H. F. Osborn, assisted by W. E. Gregory, A. E. Anderson, and Rudolph Weber.

State,	Locality or quadrangle,	Kind of work,	In charge of—
United States ---	General.	Completion of monographs on the flora of Laromie and related formations, and of the Puget formation.	F. H. Knowlton.
	Do.	Field and office inspection of topographic mapping.	J. H. Renshawe.
	Do.	Investigation of fuel resources.	M. R. Campbell.
	Do.	Investigation of lead and zinc deposits.	H. F. Bain.
	Do.	Investigation of methods of drilling wells.	Isiah Bowman.
	Do.	Investigation of production of gold and silver.	Waldemar Lindgren.
	Do.	Preparation of a geologic map of the United States.	Bailey Willis.
	Do.	Preparation of monograph on Cambrian brachiopods.	C. D. Walcott, assisted by E. Wood.
	Do.	Study of Devonian paleontology and stratigraphy.	E. M. Kindle.
	Do.	Supervision of field and office work of division of geology and paleontology.	C. W. Hayes.
	Do.	Supervision of field and office work of division of triangulation and computing, topographic branch.	S. S. Gannett.

Localities of Field Work.

State.	Locality or quadrangle.	Kind of work.	In charge of—
United States --- Gen. al.		Supervision of investigations in paleontology.	T. W. Stanton.
Do.		Supervision of investigations in petrology.	Whitman Cross.
Do.		Supervision of investigations of met- alliferous ore deposits.	S. F. Emmons.
Do.		Supervision of investigations in phys- iographic and glacial geology.	G. K. Gilbert.
Do.		Supervision of investigations of pre- Cambrian and metamorphic rocks.	C. R. Van Hise.
Do.		Supervision of stratigraphic and pa- leontologic investigations.	T. W. Stanton.
Lake Superior region.		Preparation of final report on iron- ore deposits.	C. R. Van Hise, assisted by C. K. Leith, A. E. Seaman, and W. N. Smith.
New England States and the northern Ap- palachians.		Supervision of geologic investiga- tions of crystalline rocks.	G. O. Smith.
Pacific coast.		Investigations of paleontology and stratigraphy of the Tertiary for- mations.	W. H. Dall, assisted by Ralph Arnold.
Rocky Mountain region.		Study of glacial areas.	R. D. Salisbury, assisted by W. W. Atwood.
Upper Mississippi Val- ley and Ozark region.		Investigations of stratigraphy and paleontology of Ordovician and Silurian formations, with special reference to lead and zinc deposits.	E. O. Ulrich.

INDEX OF NAMES OF EMPLOYEES.

Page.		Page.
5	Abbe, Cleveland, jr	39
5	Alden, W. C.	39
13	Anderson, A. E.	27
25	Anderson, C. G.	8, 18
5	Arnold, Ralph	27
5	Ashley, G. H.	27
5	Atwood, W. W.	8
25	Bagley, J. W.	40
6	Bain, H. F.	27
39	Baker, S. K.	21
6	Ball, S. H.	40
25	Baldwin, H. L., jr	27
6	Bannister, J. R.	8, 40
25	Bannon, T. M.	8
25	Barnard, E. C.	27
39	Barrows, H. K.	27
6	Bascom, Florence	27
25	Bassett, C. C.	8
6	Bassler, R. S.	9
6	Bastin, E. S.	40
6	Bayley, W. S.	27
26	Beaman, W. M.	28
39	Beebe, H. R.	18
26	Birdseye, E. C.	9
18	Birkinbine, John	9
26	Blackburn, J. E.	40
26	Blair, H. B.	28
39	Bolster, R. H.	40
7	Boutwell, J. M.	28
39	Bowman, Isaiah	28
7	Brenner, J. C.	28
39	Brennan, M. S.	9
26	Bright, M. S.	9
21	Brooks, A. H.	40
7	Brown, C. W.	28
26	Brown, W. N.	9
7	Rurchar, E. F.	10
26	Burkland, A. O.	10
21	Butler, B. S.	28
7	Butts, Charles	28
7	Calkins, F. C.	40
7	Campbell, M. R.	10
8	Chamberlin, T. C.	28
39	Chandler, E. F.	40
26	Chapman, Pearson	29
26	Chapman, R. H.	29
39	Clapp, F. G.	29
5	Clapp, S. K.	39
5	Clapp, W. B.	39
13	Clark, E. B.	27
25	Clark, W. B.	27
25	Clarkson, C. D. S.	27
5	Coe, Robert	27
5	Collier, A. J.	8
25	Comstock, H. D.	40
6	Cooke, C. E.	27
39	Corse, W. B.	21
6	Covert, C. C.	40
25	Cowgill, Ralph	27
6	Crider, A. F.	8, 40
25	Cross, Whitman	8
25	Cummin, R. D.	27
39	Daingerfield, J. S. B.	27
25	Dale, T. N.	8
6	Dall, W. H.	9
25	Darton, N. H.	40
6	Davis, E. P.	27
6	Davis, G. R.	28
26	Dawson, E. M., Jr.	9
39	Day, D. T.	18
26	DeWolf, F. W.	9
18	Diller, J. S.	9
26	Dole, R. B.	40
26	Douglas, E. M.	28
39	Drane, B. S.	40
7	Duke, Basil	28
39	Dunington, A. F.	28
7	Eakin, J. R.	28
39	Eckel, E. C.	9
26	Elbridge, G. H.	9
21	Ellis, E. E.	40
7	Ellis, J. R.	28
26	Emerson, B. K.	9
7	Emmons, S. F.	10
26	Emmons, W. H.	10
21	Evans, R. T.	28
7	Farmer, R. A.	28
7	Farish, W. A.	40
8	Fenneman, N. M.	10
39	Ferriss, H. R.	28
26	Fisher, C. A.	40
26	Fletcher, L. C.	29
26	Flocker, I. M.	29
39	Floore, S. P.	29

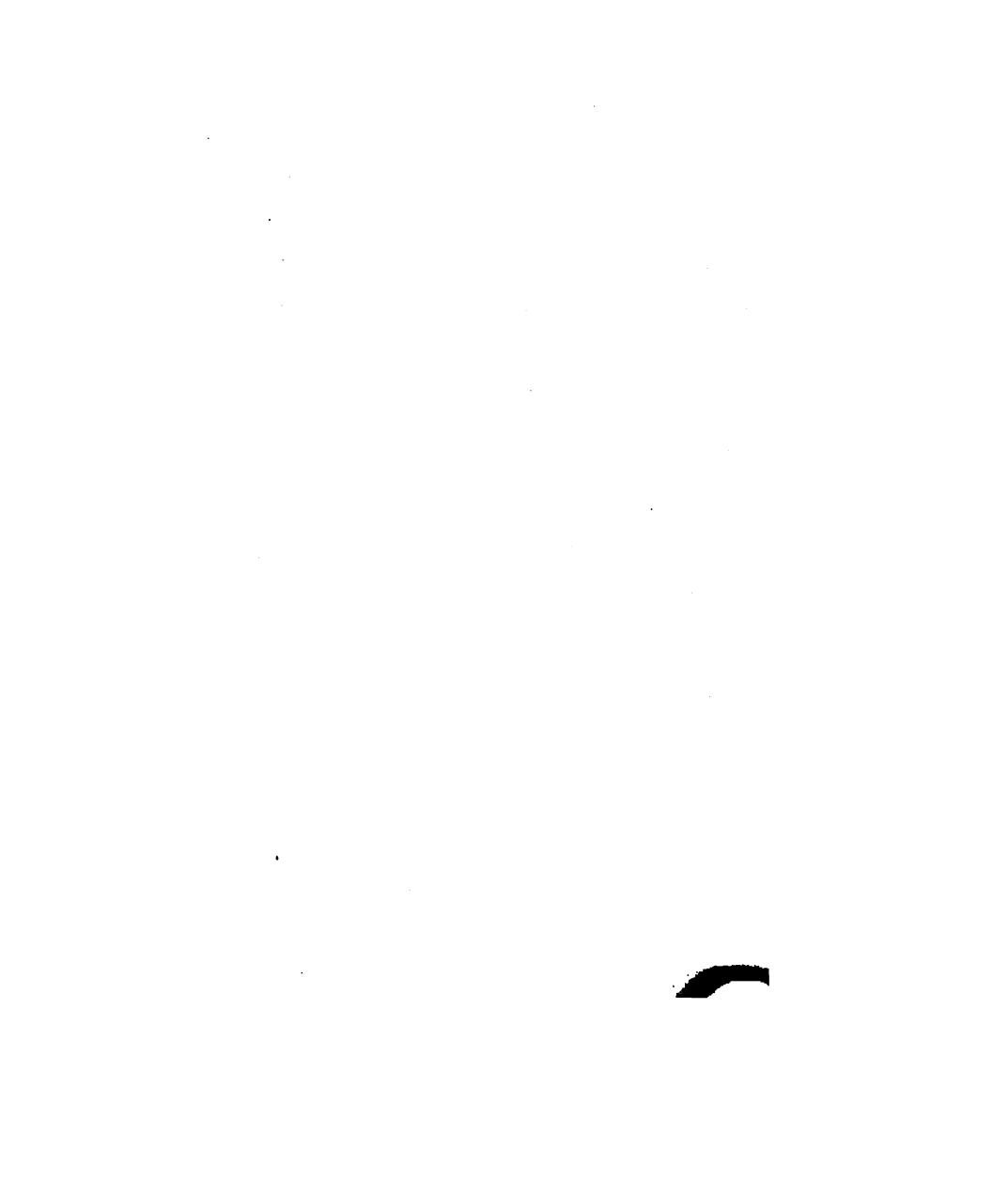
72 *Index of Names of Employees.*

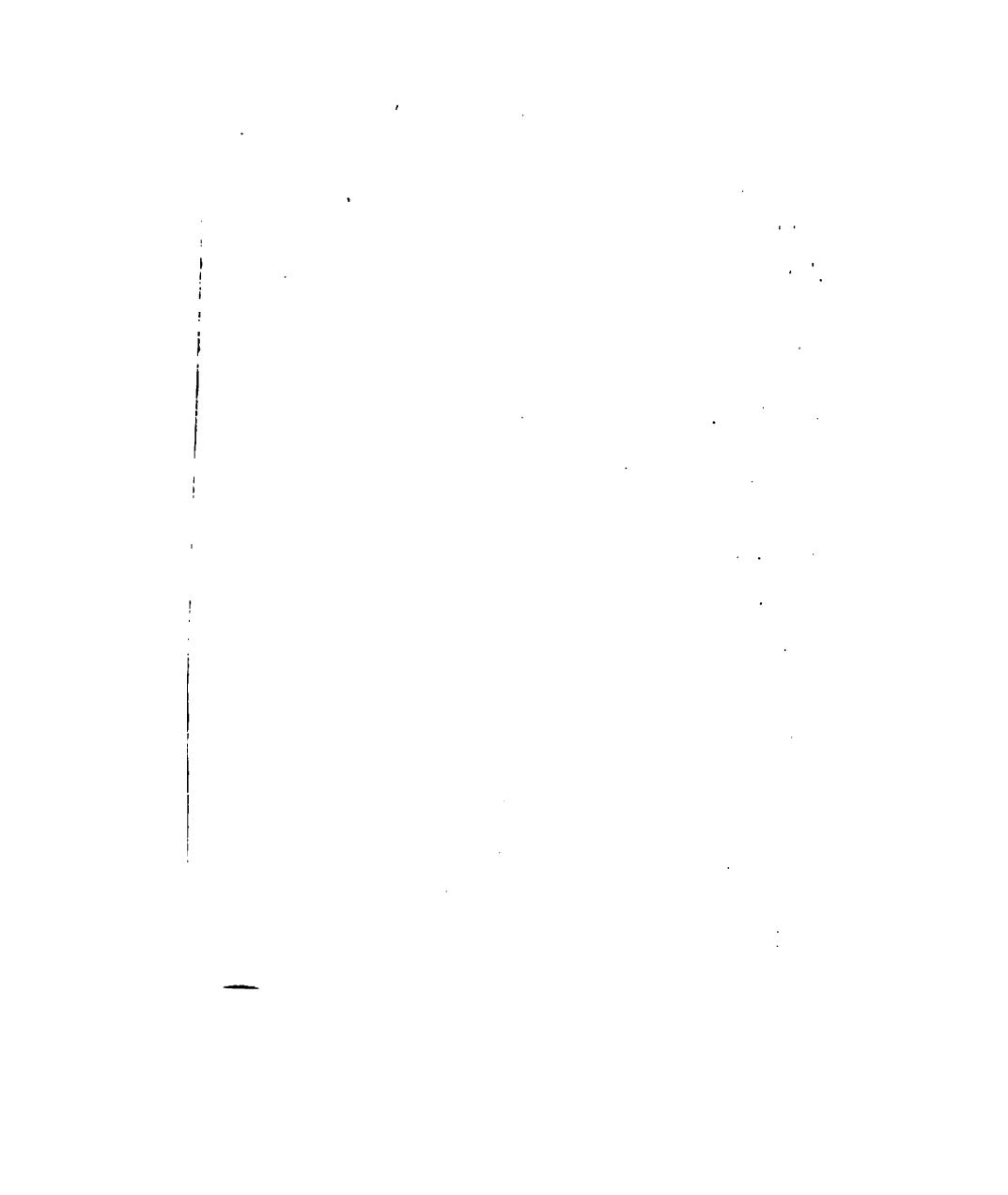
	Page.
Follansbee, Robert	40
Fowler, A. T.	29
Gale, H. S.	10
Gannett, S. S.	29
Garney, G. H.	10
Gayetty, J. I.	29
Gerdine, T. G.	21
Gilbert, G. K.	10
Gilles, J. M.	41
Girty, G. H.	11
Goodlove, C. W.	29
Graff, Fred, Jr.	29
Grant, U. S.	21
Gratton, L. C.	11
Gregory, H. E.	41
Gregory, W. K.	13
Griffin, W. H.	29
Gribowold, W. T.	11, 30
Grover, N. C.	41
Hackett, Merrill	30
Hague, Arnold	11
Hall, M. R.	41
Hall, W. C.	30
Hall, W. E.	41
Hamilton, E. G.	22
Hanna, F. W.	41
Hannegan, Duncan	30
Hurter, W. G.	30
Hurley, G. F.	41
Harrison, D. C.	30
Harrison, J. P.	30
Hartmann, Charles, Jr.	30
Hassan, A. F.	31
Hawkins, G. T.	31
Hayes, C. W.	11
Heikes, V. C.	19
Herron, W. H.	31
Hess, F. L.	22
Hewitt, Foster	11
Hill, W. R.	22
Hinderlider, M. C.	41
Hodgeson, H. H.	31
Holmes, J. A.	19
Hoopos, C. L.	31
Horton, A. H.	41
Horton, R. E.	42
Hovey, E. O.	19
Howe, Ernest	11
Hoyle, J. C.	42
Ireland, E. I.	31
Irvine, Chester	31
Irving, J. D.	11
Jennings, J. H.	31
Johannsen, Albert	12
Johnson, W. D.	12
Johnston, H. L.	-----
Jones, F. A.	-----
Jones, Oscar	-----
Joy, F. E.	-----
Kay, G. F.	-----
Keith, Arthur	-----
Kendall, C. B.	-----
Kindle, E. M.	-----
Kirchhoff, Charles	-----
Knopf, Adolph	-----
Knowlton, F. H.	-----
Kolbe, L. A.	-----
Kunz, G. F.	-----
La Forge, Laurence	-----
Lander, Ivan	-----
Landre, E. C.	-----
Lee, W. T.	-----
Leighton, M. O.	-----
Leith, C. K.	-----
Leonard, A. G.	-----
Leopold, L. S.	-----
Leverett, Frank	-----
Lewis, S. J.	-----
Libby, R. L.	-----
Lightfoot, W. J.	-----
Lindgren, Waldemar	-----
Lloyd, W. J.	-----
Lovell, W. H.	-----
Lyman, H. L.	-----
Maddren, A. G.	-----
Manning, V. H.	-----
Marshall, R. B.	-----
Martin, G. C.	-----
Martin, Lawrence	-----
Matthes, F. E.	-----
McBeth, J. F.	-----
McDonald, D. F.	-----
McDonald, H. L.	-----
McKinney, R. C.	-----
McLaughlin, Fred	-----
McNair, E. L.	-----
Meade, A. P., Jr.	-----
Meeker, R. I.	-----
Mendouhall, W. C.	-----
Merrill, F. J. H.	-----
Middleton, Jefferson	-----
Miller, W. L.	-----
Mitchelson, A. T.	-----
Moffit, F. H.	-----
Moncure, T. H.	-----
Morse, H. M.	-----
Muldrow, Robert	-----
Munn, M. J.	-----
Munroe, Hersey	-----
Murfin, A. E.	-----

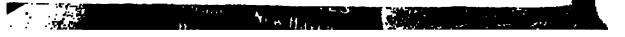
Index of Names of Employees. 73

	Page.		Page.
Murphy, E. C.	43	Spurr, J. E.	15
Nelson, C. L.	34	Staack, J. G.	36
Norcross, T. W.	43	Stabler, Herman	44
Norton, W. H.	43	Stanton, T. W.	16
Oliphant, F. H.	19	Stephenson, L. W.	44
Oliver, A. I.	34	Sterrett, D. B.	16
Oliver, R. B.	23	Steward, W. G.	44
Osborn, H. F.	13	Stewart, B. D.	36
Paige, Sidney	23	Stiles, Arthur	36
Palache, Charles	14	Stockman, L. R.	44
Parker, E. W.	20	Stone, R. W.	23
Parker, H. N.	43	Stoner, S. N.	36
Parshall, A. J.	43	Stose, G. W.	16
Peterson, O. W.	43	Stranahan, William	36
Phalen, W. C.	14	Sutton, Frank	36
Pike, Albert	34	Swank, J. M.	20
Porter, E. P.	20	Sylvester, A. H.	37
Pratt, J. H.	20	Taff, J. A.	16
Pratt, R. W.	43	Tarr, R. S.	23
Pressey, F. E.	43	Taylor, F. B.	16
Prindle, L. M.	23	Taylor, T. U.	45
Purdue, A. H.	14	Thompson, A. H.	37
Ransome, F. L.	14	Thorn, W. H.	37
Reinick, R. H.	35	Tucker, L. E.	37
Renshaw, J. H.	35	Tufts, W. O.	37
Richardson, G. B.	43	Tweeddy, Frank	37
Ries, Heinrich	20	Ulrich, E. O.	16
Roberts, A. C.	35	Urquhart, C. F.	37
Robertson, R. B.	35	Van Hise, C. R.	17
Ruley, W. W.	20	Vaughan, T. W.	17
Russell, I. C.	14	Weatch, A. C.	17
Sadier, C. L.	35	Walcott, C. D.	17
Salisbury, R. D.	14	Walker, A. M.	37
Sanford, Samuel	44	Walker, J. P.	37
Sargent, R. H.	35	Ward, W. S.	20
Sawyer, W. C.	44	Weber, Rudolf	13
Schrader, F. C.	14	Weed, W. H.	17
Schultz, A. R.	14	Weeks, F. B.	17
Seaman, A. E.	15	Weeks, E. T.	45
Searle, A. B.	35	Wheat, J. H.	38
Semper, C. H.	35	White, David	18
Shaler, M. K.	15	Whitman, J. M.	38
Shepard, E. M.	44	Williams, H. S.	18
Siebenthal, C. E.	44	Willis, Bailey	18
Simpson, H. E.	44	Wilson, H. M.	38
Sinclair, J. H.	35	Winchell, A. N.	21
Slaughter, T. F.	36	Witherspoon, D. C.	25
Smith, C. N.	15	Wood, Elvira	18
Smith, G. O.	15	Woolsey, L. H.	18
Smith, G. S.	36	Wright, C. W.	24
Smith, L. S.	36	Wright, F. E.	24
Smith, W. N.	15	Yale, C. G.	21
Soper, R. C.	44	Yoder, B. A.	24
Spencer, A. C.	15	Young, Gilbert	38









Digitized by srujanika@gmail.com

To avoid fine, this book should be returned on
or before the date last stamped below

--	--	--

8

211387

Wis.
New Haven
Conn.



Stanford University Libraries



3 6105 011 089 9

and the corresponding η_{sp}/c values are plotted in Figure 1.

The effect of the polymer concentration on the viscosity of the polyacrylate gel is shown in Figure 2.

As can be seen from Figure 2, the viscosity of the polyacrylate gel increases with increasing polymer concentration.

The effect of the pH value on the viscosity of the polyacrylate gel is shown in Figure 3.

As can be seen from Figure 3, the viscosity of the polyacrylate gel decreases with increasing pH value.

The effect of the temperature on the viscosity of the polyacrylate gel is shown in Figure 4.

As can be seen from Figure 4, the viscosity of the polyacrylate gel decreases with increasing temperature.

The effect of the ionic strength on the viscosity of the polyacrylate gel is shown in Figure 5.

As can be seen from Figure 5, the viscosity of the polyacrylate gel decreases with increasing ionic strength.

The effect of the salt concentration on the viscosity of the polyacrylate gel is shown in Figure 6.

As can be seen from Figure 6, the viscosity of the polyacrylate gel decreases with increasing salt concentration.

The effect of the salt type on the viscosity of the polyacrylate gel is shown in Figure 7.

As can be seen from Figure 7, the viscosity of the polyacrylate gel decreases with increasing salt type.

The effect of the salt concentration on the viscosity of the polyacrylate gel is shown in Figure 8.

As can be seen from Figure 8, the viscosity of the polyacrylate gel decreases with increasing salt concentration.

The effect of the salt type on the viscosity of the polyacrylate gel is shown in Figure 9.

As can be seen from Figure 9, the viscosity of the polyacrylate gel decreases with increasing salt type.

The effect of the salt concentration on the viscosity of the polyacrylate gel is shown in Figure 10.

As can be seen from Figure 10, the viscosity of the polyacrylate gel decreases with increasing salt concentration.

The effect of the salt type on the viscosity of the polyacrylate gel is shown in Figure 11.

As can be seen from Figure 11, the viscosity of the polyacrylate gel decreases with increasing salt type.

The effect of the salt concentration on the viscosity of the polyacrylate gel is shown in Figure 12.

As can be seen from Figure 12, the viscosity of the polyacrylate gel decreases with increasing salt concentration.

The effect of the salt type on the viscosity of the polyacrylate gel is shown in Figure 13.

As can be seen from Figure 13, the viscosity of the polyacrylate gel decreases with increasing salt type.